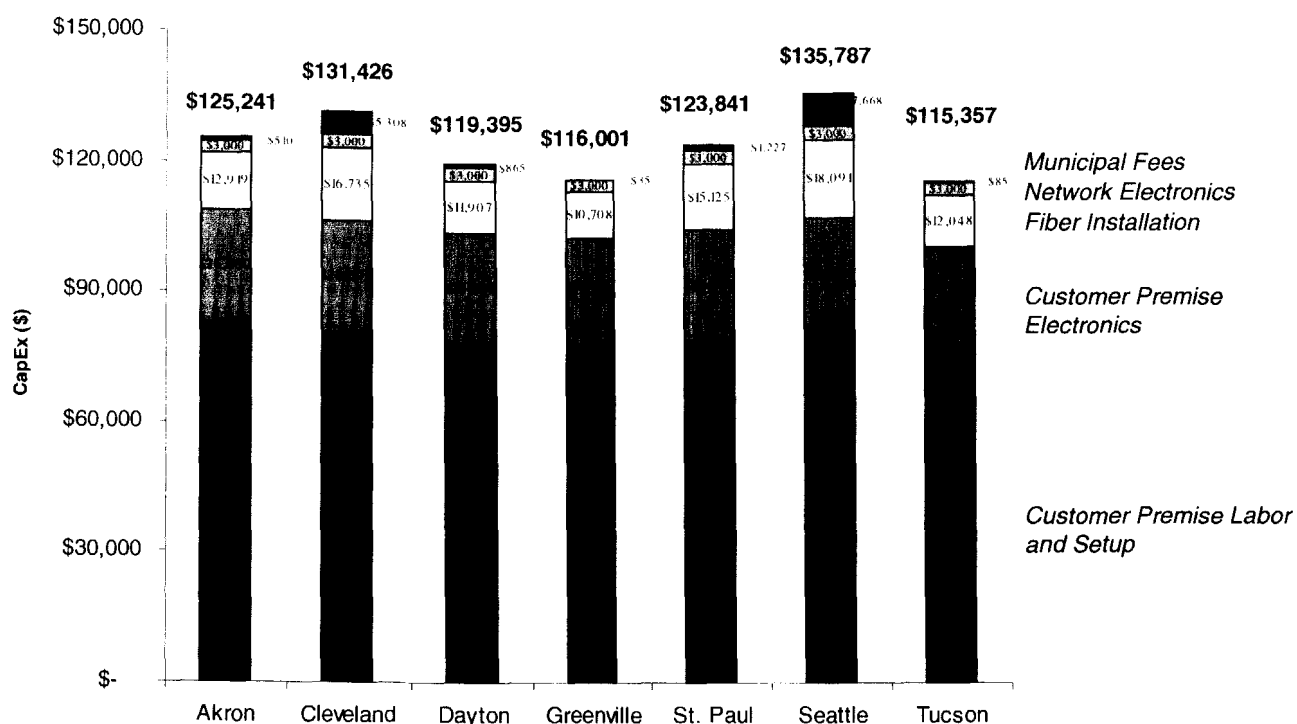


**Year 1 capital expenditures are highest in Seattle and lowest in Tucson primarily because of differences in fiber installation costs**

**Year 1 CapEx by Market for Building at 500 Feet**

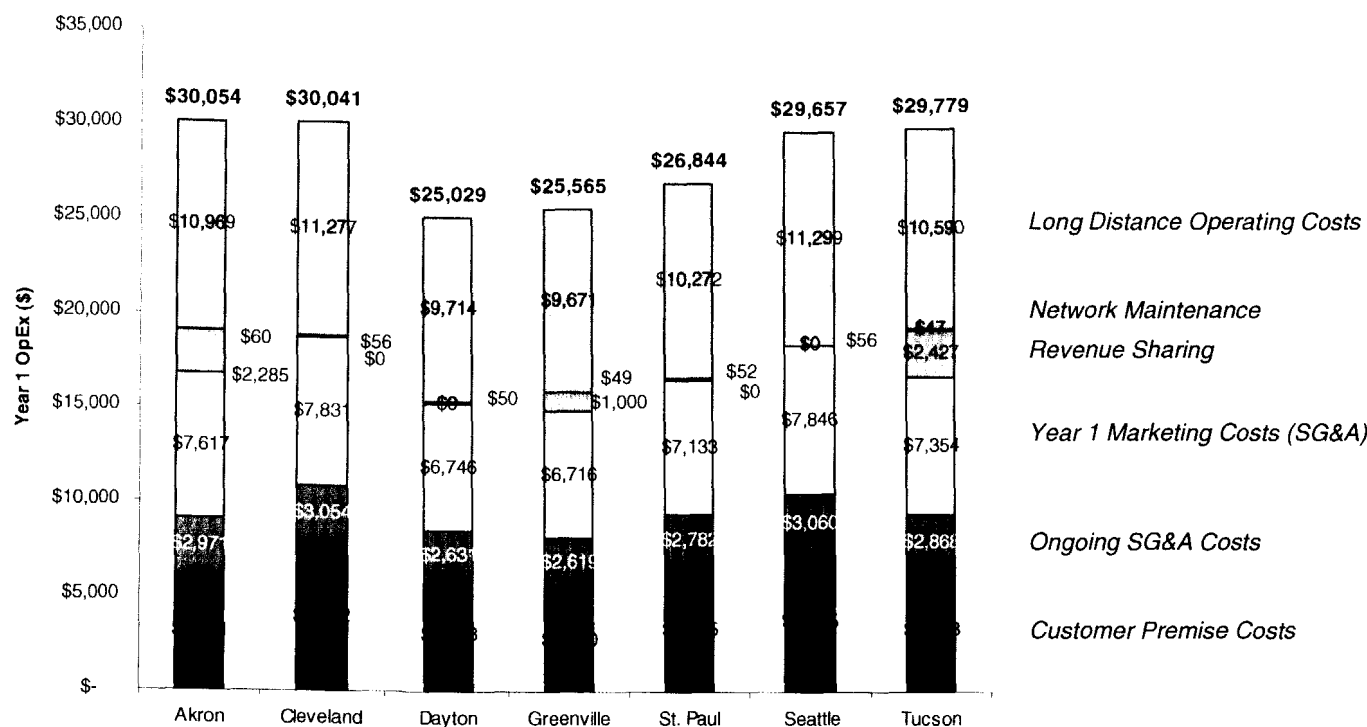


### Primary Drivers

- Labor costs vary widely from market to market, directly affecting both fiber installation costs and customer premise labor and setup costs
  - Tucson has the lowest labor cost of the seven markets
  - Seattle has the highest labor cost of the seven markets
- Municipal fees fluctuate substantially for each city
  - Tucson has a very low permit cost of \$85 at 500 feet
  - Seattle has a high permit cost of \$7,668 at 500 feet

## Differences in operating costs are primarily due to differences in customer premise costs

Year 1 OpEx by Market for Building at 500 Feet



### Primary Drivers

- Customer Premise costs have the greatest impact on OpEx differences across markets
  - Variations in rent to building owners account for much of this variation
  - Rents for Tier 1 cities can be 50% more than those for a Tier 3 city due to demand
- Differences in franchise agreements also account for a significant portion of the variation
  - Cleveland, Dayton, St. Paul, and Seattle do not have any franchise agreements (but have higher upfront for permitting costs)
  - Tucson has a very high franchise agreement cost at 5.5% of annual revenues
  - Greenville charges an annual fee of \$1,000 in lieu of a percent of revenues

## Today's discussion

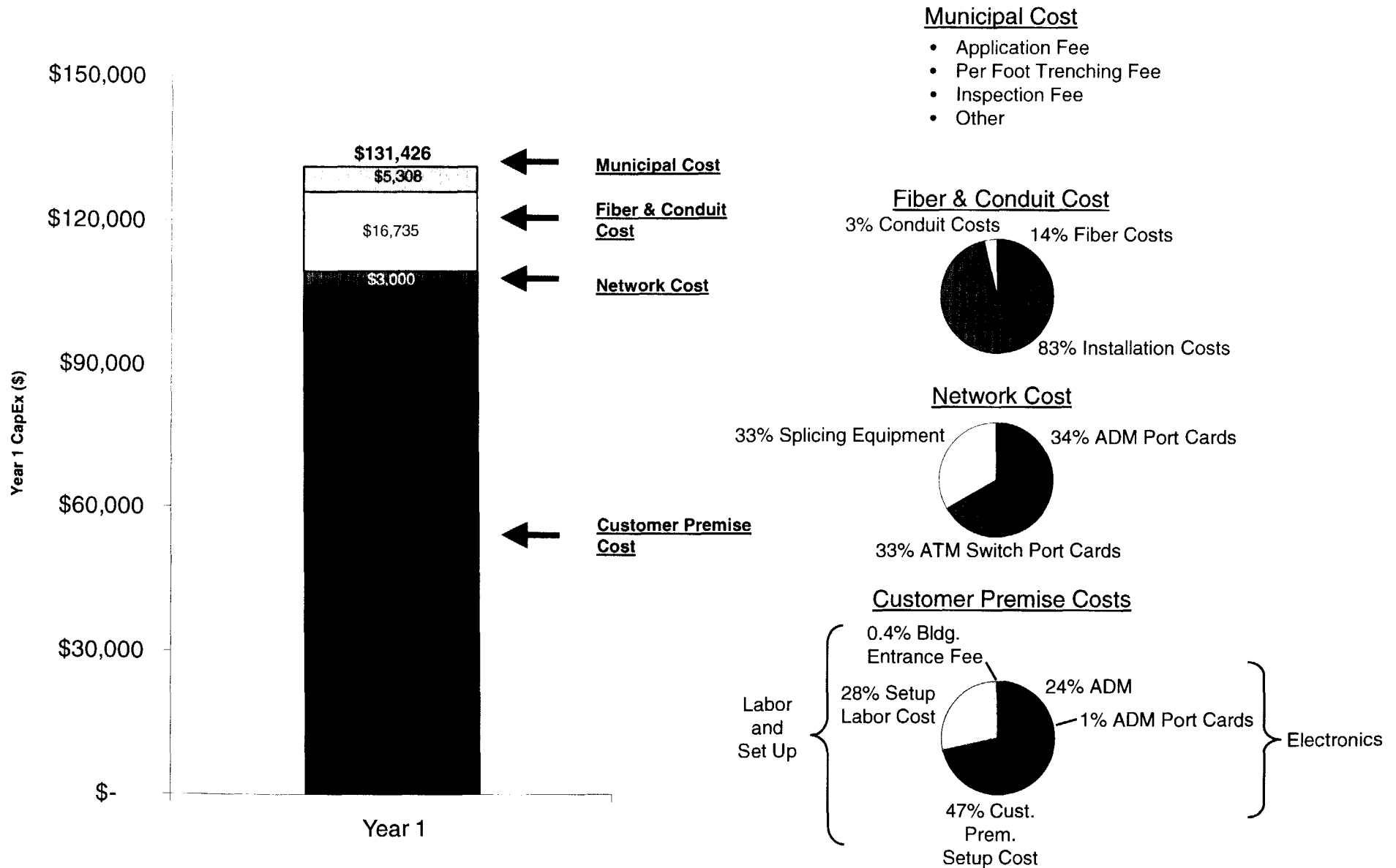
- Background & Introduction
- Current Results
- Model Architecture Design
- Assumptions and Sources

The model builds on a choice of city, a choice of technology, what we define as “breakeven”, and a lateral distance

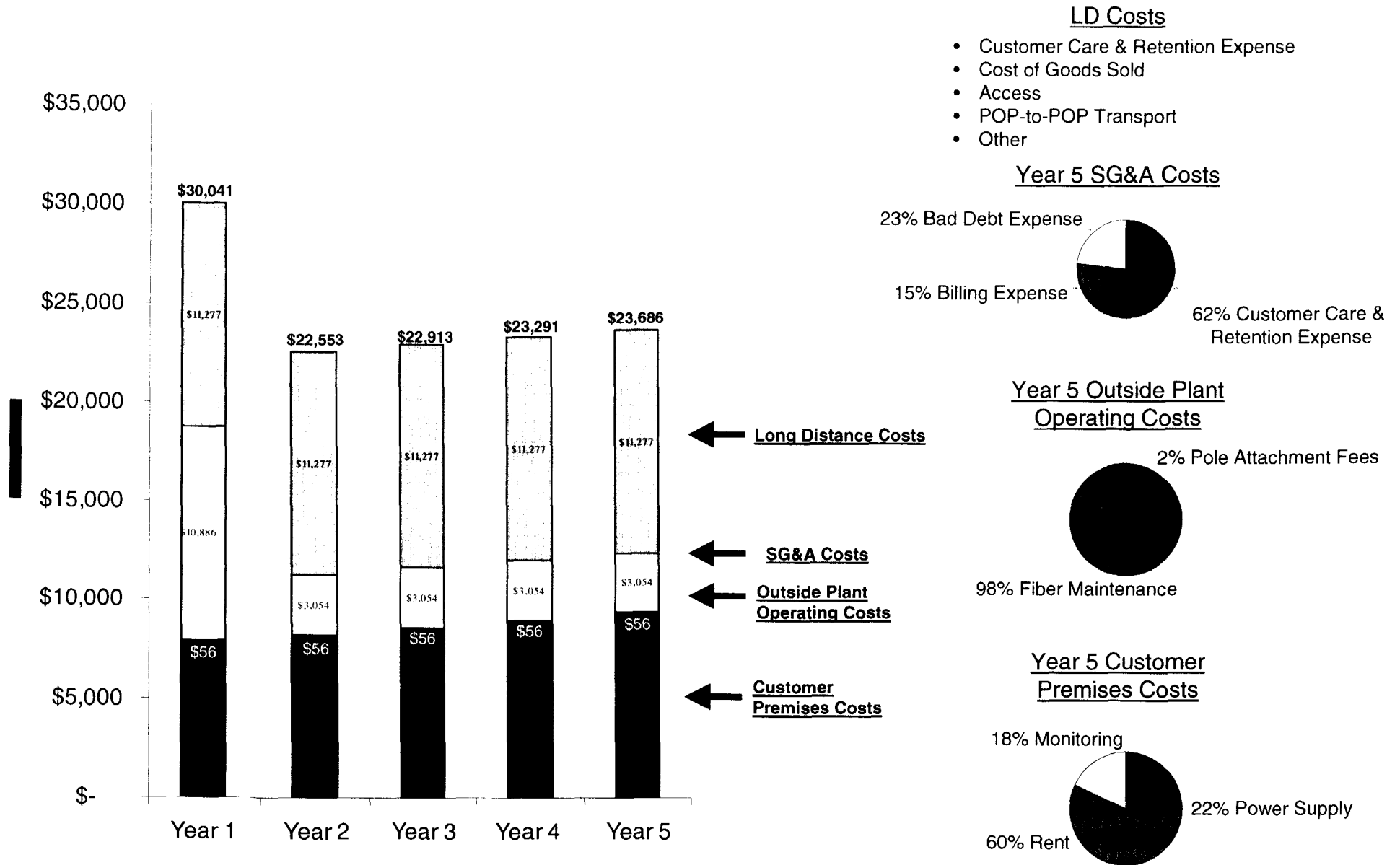
The screenshot shows a software interface for a model. On the left, there are three buttons: "Calculate Threshold", "Run Frontiers For All Markets", and "Run Before Exiting the Model". Below these buttons are four dropdown menus: "Cleveland, Ohio", "Fiber - SONET", "NPV", and "Ongoing (>10)". A text input field contains the number "500". On the right, there is a button labeled "Calculate CapEx & OpEx charts". To the right of the main interface, four callout boxes show the expanded options for each dropdown menu:

- City dropdown:** Cleveland, Ohio, Akron, Ohio, Cleveland, Ohio, Dayton, Ohio, Greenville, South Carolina, St. Paul, Minnesota, Seattle, Washington, Tucson, Arizona.
- Technology dropdown:** Fiber - SONET, Fiber - SONET.
- NPV dropdown:** NPV, NPV, IRR, Minimum Funding.
- Ongoing (>10) dropdown:** 2, 3, 4, 5, 6, 7, 8, 9, 10, Ongoing (>10).

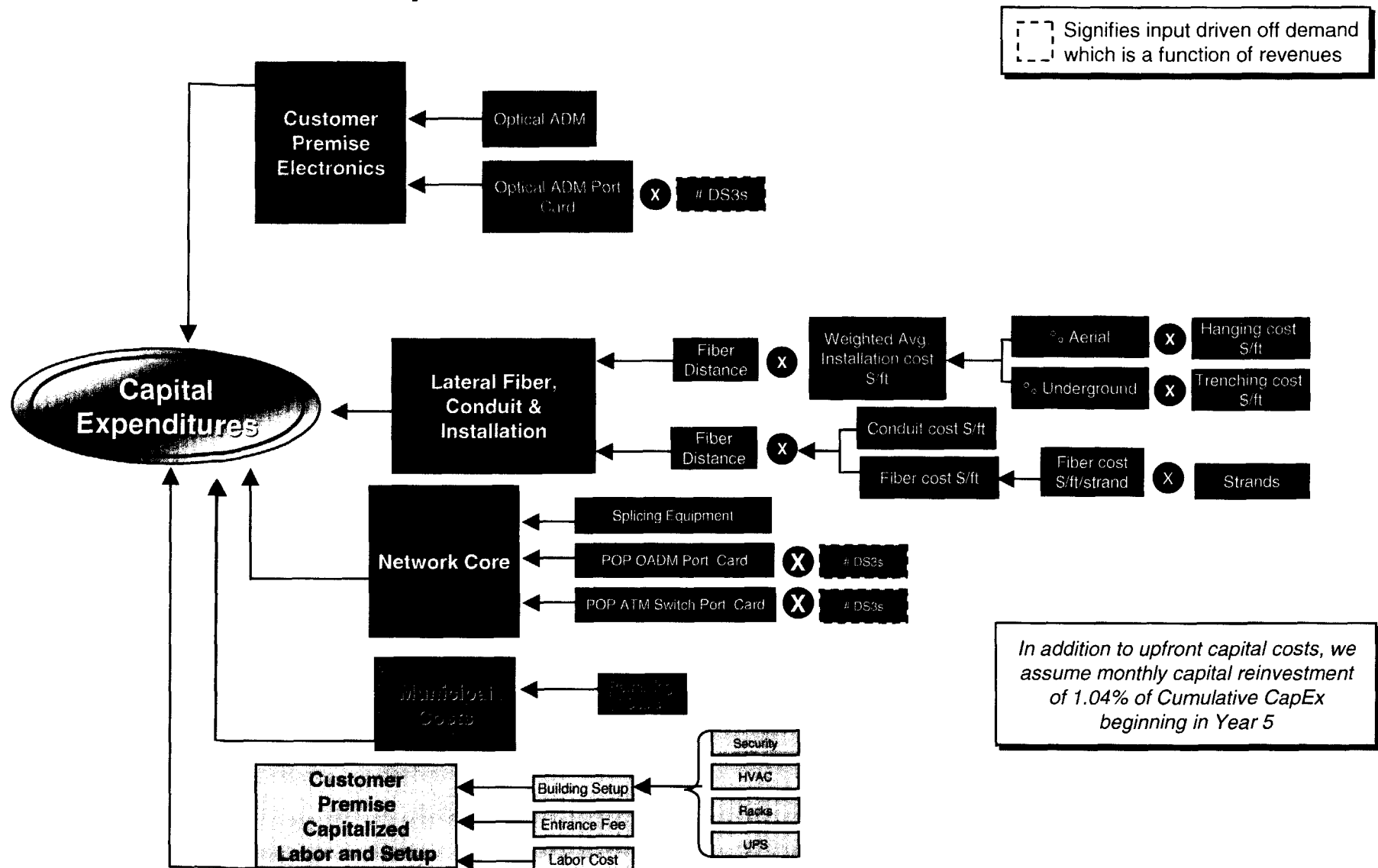
For a building in Cleveland at 500 feet from CLEC fiber, we have the following capital expenditures...



# The same Cleveland building results in the following operating expenses through year 5...

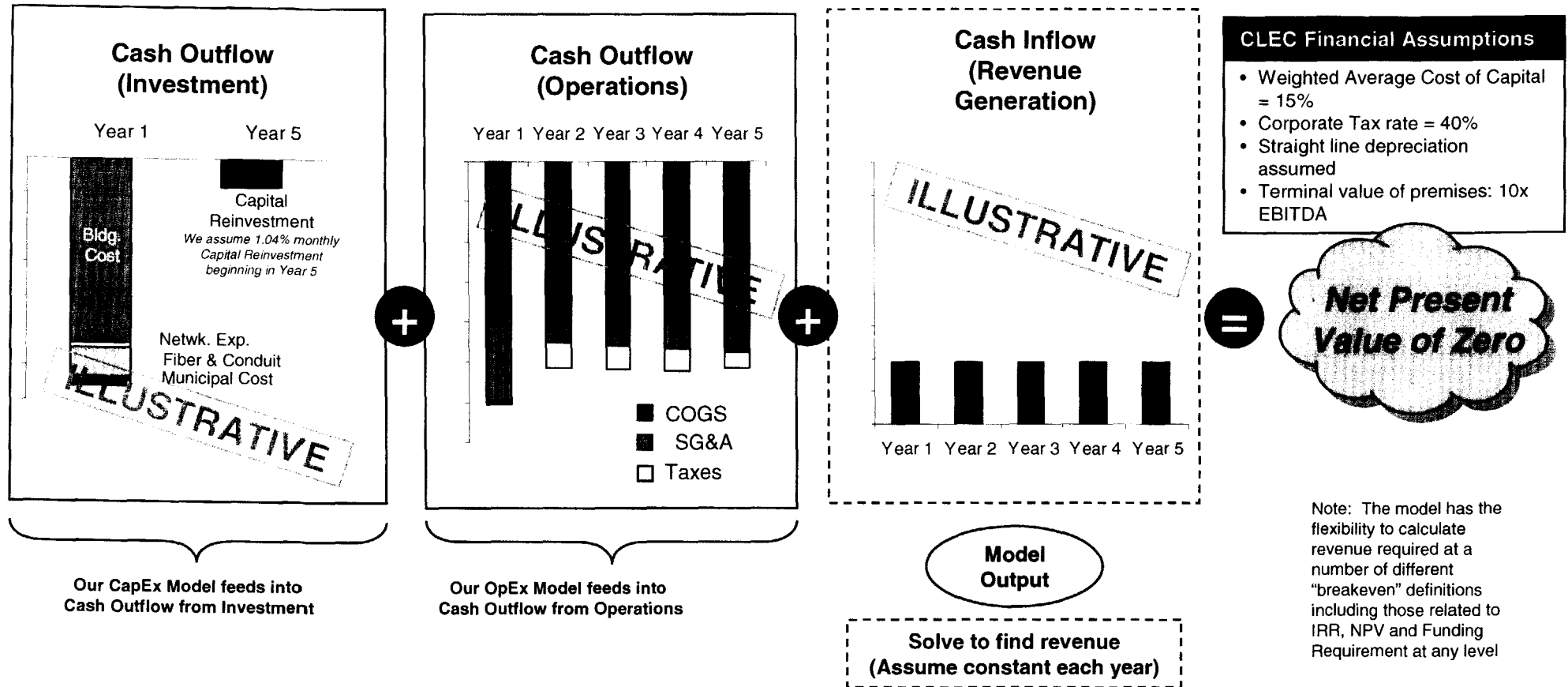


The capital expenditures are driven by five main investment components: building electronics, lateral fiber and conduit, network core, municipal costs, and capitalized labor and setup





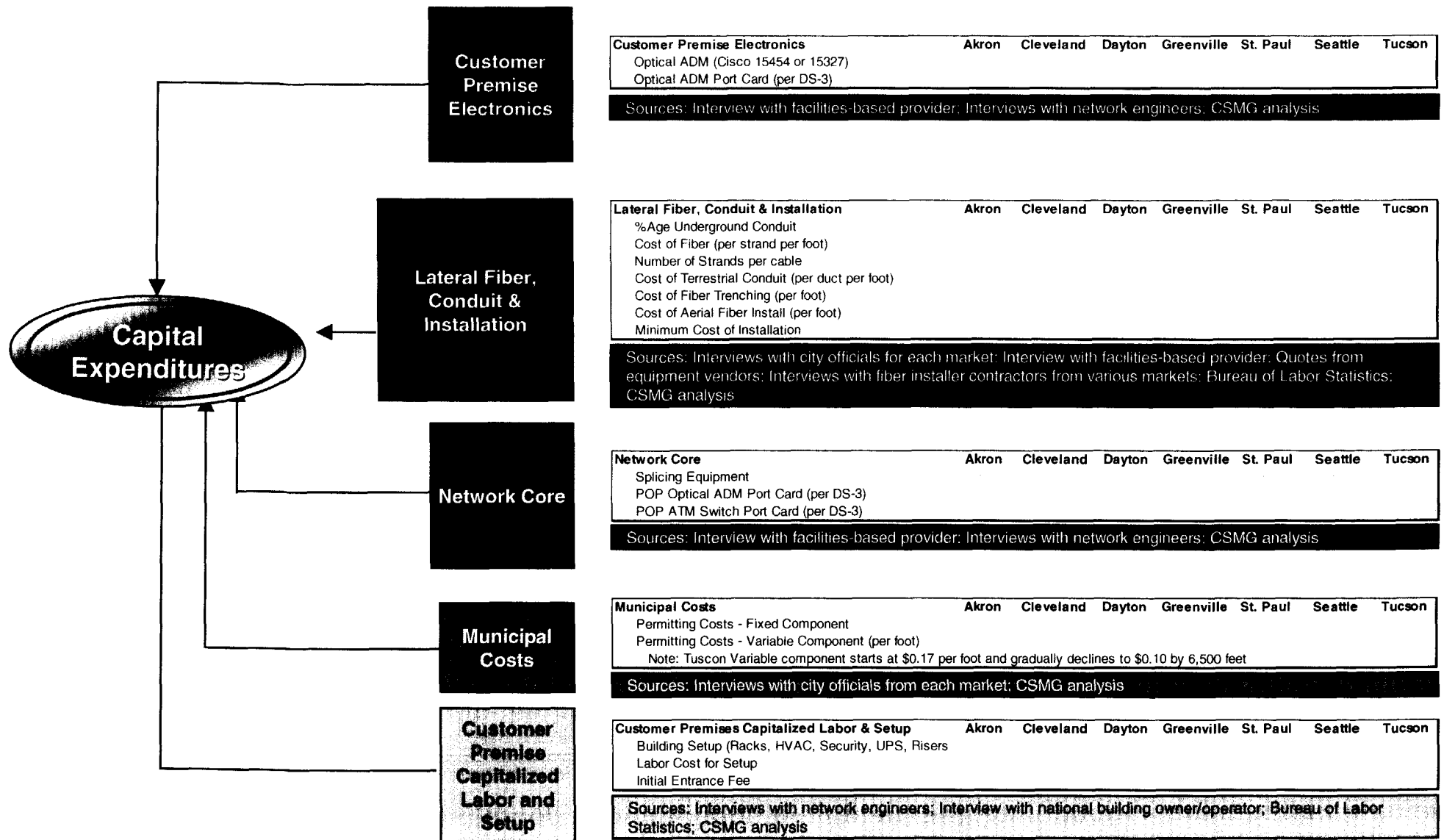
From the CapEx and OpEx models we develop cash outflows from investment and operations and then solve to find the breakeven revenue that results in net present value of zero



## Today's discussion

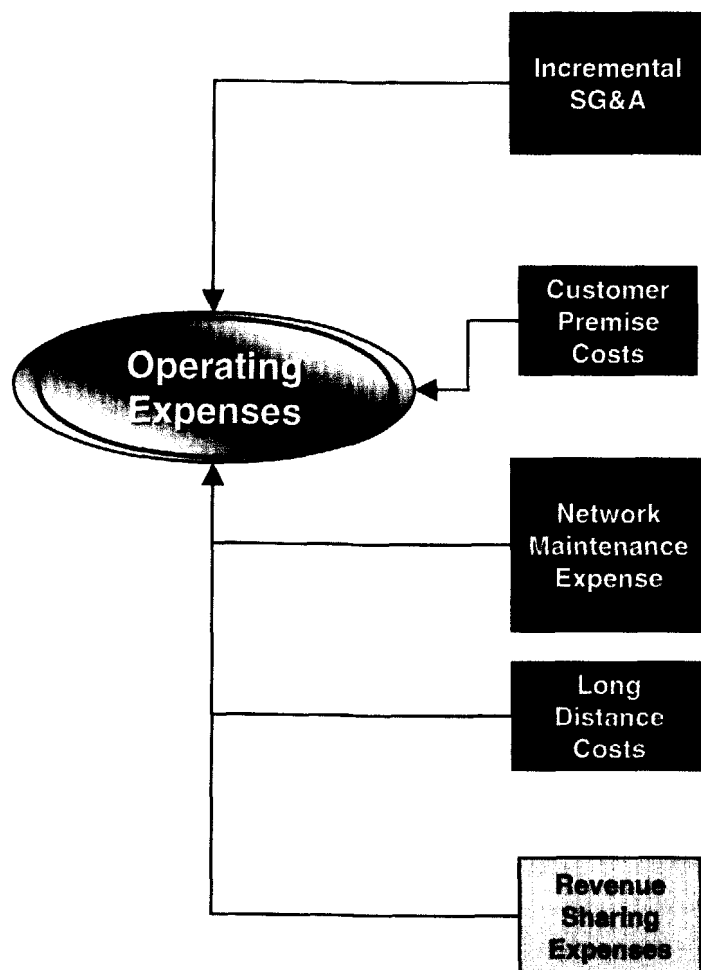
- Background & Introduction
- Current Results
- Model Architecture Design
- Assumptions and Sources

## The following are the specific market inputs for capital expenditures...



Note: Data is rounded and calculations based on these rounded numbers may not exactly equal cost depicted on page 28

## The following are the specific market inputs for operating expenses...



### Incremental SG&A Expenses

Customer Care Expense  
Billing Expense  
Bad Debt Expense  
Sales & Marketing Expense (As a multiple of 1st month's revenue)

Sources: CLEC Annual Reports; CSMG analysis

### Customer Premise Costs

Akron Cleveland Dayton Greenville St. Paul Seattle Tucson

Electricity Cost (per bldg. per year)  
Annual Power Rate Increase  
Rent (per bldg.)  
Annual Rent Increase  
Monitoring Cost (per bldg.)  
Annual Monitoring Cost Increase

Sources: Interviews with fiber installer contractors; Energy Information Association; Interview with national building owner operator; Bureau of Labor Statistics; CSMG analysis

### Network Maintenance Expenses

Akron Cleveland Dayton Greenville St. Paul Seattle Tucson

Fiber Maintenance (per foot)  
Pole Attachment Fees (per foot)

Sources: Bureau of Labor Statistics; Interviews with facilities-based providers; CSMG analysis

### Long Distance Costs

Akron Cleveland Dayton Greenville St. Paul Seattle Tucson

Long Distance Revenue as % of total Revenue  
Long Distance Cost as % of LD Revenue

Sources: CSMG analysis

### Revenue Sharing Costs

Akron Cleveland Dayton Greenville St. Paul Seattle Tucson

Ongoing Revenue Sharing (%age of Revenue)\*  
Note: Although this cost was considerable in recent years, the relative leverage between building owner and provider has shifted significantly over the past several months such that building owners no longer have expectations of revenue sharing arrangements with providers  
Franchise Agreements (% of rev. per year)  
Flat Franchise Agreement (\$ per Year)

Sources: Interview with national building owner/operator; Interviews with city officials from each market; CSMG analysis

Note: Data is rounded and calculations based on these rounded numbers may not exactly equal cost depicted on page 29

**Note that we assume there is no existing conduit available for lease, a relatively conservative assumption. If we run the model assuming a CLEC leases conduit, the revenue breakeven frontiers are substantially reduced, especially at longer distances...**

***Annual Revenue Breakeven Threshold (NPV = 0) by Distance per Building***

	100	200	300	400	500	600	700	800	900	1000
Akron, Ohio	\$43,657	\$44,624	\$45,592	\$46,559	\$47,527	\$48,495	\$49,462	\$50,430	\$51,397	\$52,365
Cleveland, Ohio	\$44,126	\$45,030	\$45,934	\$46,838	\$47,742	\$48,646	\$49,550	\$50,453	\$51,357	\$52,261
Dayton, Ohio	\$38,597	\$39,533	\$40,469	\$41,405	\$42,341	\$43,277	\$44,213	\$45,149	\$46,085	\$47,021
Greenville, South Carolina	\$38,867	\$39,768	\$40,670	\$41,571	\$42,472	\$43,374	\$44,276	\$45,178	\$46,079	\$46,981
St. Paul, Minnesota	\$40,219	\$41,277	\$42,335	\$43,393	\$44,451	\$45,509	\$46,568	\$47,626	\$48,684	\$49,742
Seattle, Washington	\$43,925	\$44,844	\$45,763	\$46,682	\$47,601	\$48,520	\$49,440	\$50,359	\$51,278	\$52,198
Tucson, Arizona	\$42,180	\$43,164	\$44,151	\$45,137	\$46,124	\$47,109	\$48,089	\$49,068	\$50,092	\$51,115